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Spectrum of ocular malignant tumors in a tertiary care teaching hospital

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ABSTRACT

Introductions: The pattern of ocular malignant tumors in institutes of Eastern Nepal was analyzed by a retrospective study. Ocular malignant tumors are relatively rare compared to other eye lesions, and require immediate diagnosis and management. Ignorance or unawareness can result into debility, loss of vision, and death. This study provides spectrum of ocular malignant tumor correlating its pathological and clinical findings.

Methods: This cross sectional study includes ninety-six cases of ocular malignant tumors diagnosed in the Department of Pathology from January 2005 to December 2009. Relevant history, clinical findings and light microscopic findings were reviewed. Descriptive analysis was done.

Results: A total of 96 patient's records were studied. Age ranged between 1-90 years. Male to female ratio was 1.4:1. Retinoblastoma was found in 34.5%, basal cell carcinoma (18%), squamous cell carcinoma in 14.5% and malignant melanoma in 10.5%.

Conclusions: Early diagnosis and management help to reduce debility and loss of vision of the patients as well as help ophthalmologist in shaping the strategy for diagnosis and management of malignant neoplasm. This help in decrease morbidity and mortality of the patient.

Keywords: malignant melanoma, ocular malignant tumor, retinoblastoma, squamous cell carcinoma

INTRODUCTIONS

Ocular malignant tumors are relatively rare compared to other eye lesions and require prompt diagnosis and management. Malignant tumors of eyelid, conjunctiva, retina and orbit in both adults and children have been reported.[1] However, there exists a variation in pattern and frequency on the basis of geographical locations.[2-5]

Retinoblastoma in children and basal cell carcinoma in adults were the commonest findings in eastern Nepal.[1] However, ocular malignant tumors have not been reported from this part of Nepal. The objective of this study was to retrieving the hospital data of the patients to find out the spectrum of pathological findings of ocular malignant tumors and their clinical findings.

METHODS

The patients with ocular complaints consulted the ophthalmologist at hospitals where all history taking, clinical examination, investigations and surgical interventions were done. The biopsy specimens of eye and adnexa were submitted to the Pathology laboratory of B.P.Koirala Institute of Health Sciences, Dharan, Nepal from January 2005 to December 2009.

The specimens were fixed, processed and stained with hematoxylin & eosin, and special stains were used as and when required. The diagnosis was confirmed with the help of light microscope. The slides of which were reviewed with the help of hospital data.

All other cases including benign neoplasm, tumor-like lesions and inflammatory conditions, on the basis of history, clinical examination and histology findings, were excluded during study. Malignant tumors of various histological types were included for the study and these cases were analyzed on the basis of gender, age group and thereafter results designed in the form of tables, figures and text seen over a period of 5 years.

RESULTS

In this retrospective study of 96 cases, 56 were male and 40 were female patients. Age ranges were between 1-90 years:

Table 1. Age group and sex of the malignant cases

Age (Yr)	Male	Female	Total
0-10	11	9	20
11-20	15	7	22
21-30	8	5	13
31-40	6	4	10
41-50	7	6	13
51-60	6	3	9
61-70	2	2	4
71-80	1	3	4
81-90	0	1	1
Total	56	40	96

Table 2. Pattern of malignant neoplasm

Malignant Neoplasm	No. of cases	% of cases
Retinoblastoma	39	40.6
Basal cell carcinoma	24	25.0
Squamous cell carcinoma	15	15.62
Malignant melanoma	12	12.52
Sebaceous carcinoma	6	6.26
Total	96	100

DISCUSSIONS

The present work revealed 58.34% males and 41.67% females. This was similar to the findings of 48.8% and 51.2% respectively in eastern Nepal and closer to 53.6% and 46.4% respectively in Singapore.[2,4] The most common malignancy in this study was retinoblastoma (40.6%). Results of the study done by Sunderraj Pet. al and Poso M.Y.et al showed 32 % and 31.7 % respectively.[6,10] Similar findings were also observed by the study done by Marshall et.al as the most common ocular malignancy in children.[8] In one of the study done in Nepal, Retinoblastoma was found to be 6.7% only. It varies greatly in comparison to our case series. It may be due to less number

of cases in their study as enucleation was started recently in their institute.[14]

The second most common tumor in our study was basal cell carcinoma (25%). Reports from Sudan and Papua New Guinea revealed 6.1%, and 9.1% respectively with average age of 54 years.[9,13] Likewise, the squamous cell carcinoma in our study was 13.92%, third commonest tumors. But, a study in Sudan showed it as the commonest tumor with 50.4% cases[9]andPoso M.Y. et al reported it as the commonest tumor in 33.5% cases.[10] This figure showed a little more variation between the occurrences of ocular squamous cell carcinoma among different parts of the world. Ultraviolet spectrum could be a factor for high incidence of this tumor, as large no. of persons work in the open sun, especially farmers and workers are exposed to it.

Malignant melanoma was reported 4.6% and 4.5% respectively in the studies.[9,13] There was 12.52% melanoma in the present study. The study conducted in Eastern Nepal and Nigeria reported 9.5% and 7.7% respectively of all ocular malignancies.[2,5] Sebaceous carcinoma was observed 1.7% and 31.7% respectively in studies in Papua New Guinea and Shanghai (China).[13,11] It was reported 12.1% of all ocular malignant tumors in a study in Korea. Our study showed about 6.26% of sebaceous carcinoma. This variation may account for the geographical factors in the study involved. Studies in Korea and India found 21.2% and 33% respectively.[6,12] However, according to Kass et al, it accounts for 1-5.5% of all eyelid malignancies in the USA.[1]

CONCLUSIONS

This retrospective study of malignant tumors of eye and adnexa has shown retinoblastoma as the most common tumor, followed by basal cell carcinoma, squamous cell carcinoma, malignant melanoma and sebaceous carcinoma.

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REFERENCES

1. Gunduz, Hsu WM. Incidence of eye cancer in Taiwan: an 18-year review. Eye. 2004;18:152-8.
2. Thakur SK, Sah SP, Lakhey M, Badhu BP. Clinical research. Primary malignant tumours of eye and adnexa in Eastern Nepal. Clinical & Experimental Ophthalmology 2003; 31: 415-7.
3. Cheng CY, Au Eong KG, Saw SM, Chan TK, Lee HP. Eye cancer incidence in Singapore. Br J Ophthalmol.2000; 84: 767-70.
4. Lee SB, Esmaeli B. Diagnosis and management of malignant tumors of the eyelid, conjunctiva, and orbit. Expert Rev Ophthalmol. 2008; 3: 63-75.
5. Askira BH, Nggada HA. Orbito-ocular malignancies in Maiduguri, North Eastern Nigeria: a histopathologic review. The Internet Journal of Ophthalmology and Visual Science.2007; 5:1-4.
6. Sunderraj P. Malignant tumours of the eye and adnexa. Indian J Ophthalmol.1991;39: 6-8.
7. Marshall EC. Epidemiology of tumors affecting the visual system. OptomClin. 1993; 3: 1-16.
8. Malik MO, El Sheikh EH. Tumors of the eye and adnexa in the Sudan. Cancer. 1979; 44: 293-303.
9. Poso MY, Mwanza JC, Kayembe DL. Malignant tumors of the eye and adnexa in Congo-Kinshasa. J FrOphthalmol. 2000; 23: 327-32.
10. Verma N, Murthy DP, Kerek A. Orbital malignancy in Papua New Guinea: A 21 year review. Australian and New Zealand Journal of Ophthalmology. 1999; 27: 27-31.
11. Ni Z. Histopathological classification of 3,510 cases with eyelid tumor. Zhonghua Yan KeZaZhi. 1996; 32: 435-437.
12. Roh KK, Lee JH, Youn DH. Clinical analysis of tumors of the eye and its adnexa. Kor. J. Ophthalmol. 1998; 2: 27-31.
13. Kass LG, Hornblass A. Sebaceous carcinoma of the ocular adnexa. Surv Ophthalmol. 1989; 33: 477-90.
14. R. Kumar , R.K. Adhikari, M.K. Sharma, D.R. Pokharel, N. Gautam. Pattern of Ocular Malignant Tumors in Bhairahwa, Nepal. The Internet Journal of Ophthalmology and Visual Science. 2009;7(1).1-6.